

REMARKS

Claims 1-17 are pending in the application. The status of the claims is as follows:

Claims / Section	35 U.S.C. Sec.	References / Notes
1 & 2	§102(b) Anticipation	<ul style="list-style-type: none">• Sontag (U.S. Patent No. 4,654,880).
3, 6-8, 11 & 16	§103(a) Obviousness	<ul style="list-style-type: none">• Sontag (U.S. Patent No. 4,654,880); and• Katayanagi, et al. (U.S. Patent No. 5,732,390).
4 & 5	§103(a) Obviousness	<ul style="list-style-type: none">• Sontag (U.S. Patent No. 4,654,880); and• Anderson (U.S. Patent No. 5,721,783).
9 & 10	§103(a) Obviousness	<ul style="list-style-type: none">• Sontag (U.S. Patent No. 4,654,880);• Katayanagi, et al. (U.S. Patent No. 5,732,390); and• Anderson (U.S. Patent No. 5,721,783).
12-15 & 17	Objected to	<ul style="list-style-type: none">• Allowable, but dependent from rejected base claim(s)

5 Applicant thanks the Examiner for the indication of allowable subject matter in the application. Applicant has amended claims 12-15 and 17 to eliminate the dependencies from rejected base claims. Applicant has further amended independent claims 1, 6 and 16 to more distinctly claim and more particularly point out the invention. Applicant has further provided discussion for
10 distinguishing the present invention, with claims as amended, from the art cited against it.

Applicant's use of reference characters below is for illustrative purposes only and is not intended to be limiting in nature unless explicitly indicated.

35 U.S.C. §102(b), CLAIMS 1 & 2 ANTICIPATION BY SONTAG

1. Applicant has amended claim 1 to include structural limitations related to the antenna and radio device that are not taught or suggested by Sontag.

In the OA, on p. 2, the Examiner rejected claims 1 and 2 as being
5 anticipated by Sontag, illustrating how the claim elements are met by this reference.

Applicant has amended claim 1 to include the limitation that the antenna includes a coil and first capacitor, and the radio device further comprises a switch and a second capacitor being connectable in parallel to the first capacitor by the
10 switch, so that a resonance frequency of the self-exciting oscillation circuit can be modulated by switching the switch. Support for this amendment can be found in the only figure, as well as in the paragraphs [0013] and [0014].

Sontag teaches a signal transmission system comprising a transmitter with a resonant LC antenna and a remote receiver with a similar resonant LC
15 antenna to transmit data from this transmitter to the receiver. To excite the transmitting resonant LC antenna, the transmitter comprises a specific oscillator circuit (see Sontag, col. 3, line 62 to col. 4, line 6).

In contrast, the hearing device of claim 1, as amended, does not need an oscillator circuit as taught by Sontag. The antenna circuit according to the
20 amended claim 1 is connected via a first switch to an amplifier. To transmit a signal via the antenna circuit (that comprises a parallel circuit of a coil and a first capacitor), the first switch is closed for initiating resonance in the oscillator circuit. A second capacitor is connected in parallel to the antenna circuit with a second

switch. The resonance frequency of the antenna circuit can be varied by operating the second switch (see paragraphs [0013] and [0014] of the specification).

Advantageously, the hearing device constructed in this manner “can be realized in a very small overall space” (see paragraph [0016]). Another advantage of such a hearing device is that the antenna circuit can be excited “with relatively low power” (see paragraphs[0016]). The signal transmission system that Sontag teaches does not offer these advantages.

For these reasons, Applicant asserts that the amended claim language clearly distinguishes over the prior art, and respectfully request that the Examiner withdraw the §102 rejection from the present application.

35 U.S.C. §103(a), CLAIMS 3, 6-8, 11 AND 16 OBVIOUSNESS OVER SONTAG IN VIEW OF KATAYANAGI

2. Independent claims 6 and 16 have been amended to further distinguish over the combination of Sontag and Katayangi.

In the OA, on pp. 3-5, the Examiner rejected claims 3, 6-8, 11 and 16 as being obvious over Sontag in view of Katayanagi. With regard to independent claims 6 and 16, the Examiner stated:

Regarding claim 6, Sontag discloses a hearing device (a signal transmission device for transmission across a barrier such as the skin in an implanted hearing aid, see col. 4, lines 15-18), comprising: a receiving device (18) configured to receive a plurality of values of at least one radio signal (See Fig. 1 and col, 1, lines 29-33 and col. 1, line 58 to col. 2, line 26). Sontag does not expressly disclose the receiving device comprising a median filter device with which a median value of the plurality of values is determined for noise signal

prevention. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

...

Regarding claim 16, Sontag discloses a method for noise signal reduction in hearing device (a signal transmission device for transmission across a barrier such as the skin in an implanted hearing aid, see col. 4, lines 15-18) receiving signals, comprising: a receiving a plurality of values of at least one radio signal via a hearing device (See Fig. 1 and col. 1, lines 29-33 and col. 1, line 58 to col. 2, line 26). Sontag does not expressly disclose the receiving method comprising a median filtering of the plurality of values to produce a median value for noise signal reduction. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

The present invention describes a receiving device with an antenna circuit that "functions as a receiver" and a median filter. A signal received by the antenna circuit is supplied to this median filter. "The median filter filters the average from, for example, five values and therewith provides a very good suppression or reduction of noise" (Specification, paragraph [0017]).

Katayanagi teaches a speech signal transmitting and receiving apparatus, such as a portable telephone set, comprising a background noise domain detection circuit, a noise level detection circuit, and a median filter. To detect the

noise level of a background noise, a "frame power" is measured (Katayanagi, col. 3, lines 39 to 65). In an additional step, the median filter is used to filter the "frame power" to detect the average background noise (Katayanagi, col. 10, lines 23 to 31). Depending on the output signal of the median filter, a controller then
5 controls a received voice sound volume (Katayanagi, col. 10, lines 32 to 44).

Based on the combination of Sontag and Katayanagi, an expert for hearing devices would insert a median filter into a receiver taught by Sontag to detect the average intensity of the received signals. The expert would then amplify the received signals according to the intensity determined by median
10 filtering. By doing so, the expert would not be able to free a frequency modulated radio signal from frequency drifts caused during the transmission of signals from a transmitter to a remote receiver.

Independent claims 6 and 16 have therefore been amended to include that the plurality of values represent a plurality of frequencies for clarification.
15 This solution cannot be found in the combined teachings of Sontag and Katayanagi. The additional features of the new claims 6 and 16 can be found in the paragraphs [0009], [0011] and [0017].

Regarding the other dependent claims, applicant relies on the arguments presented above with respect to the independent claims

**35 U.S.C. §103(a), CLAIMS 4, 5, 9 AND 10 OBVIOUSNESS OVER SONTAG IN VIEW OF
KATAYANAGI AND ANDERSON**

3. *Applicant relies on the arguments above and the amendments to the independent claims, and asserts that the addition of Anderson to the combination*
5 *fails to teach or suggest the invention with claims as amended.*

In the OA, on pp. 5-6, the Examiner rejected claims 4, 5, 9 and 10 over some combination of Sontag, Katayanagi and Anderson. Applicant relies on the above arguments as related to the independent claims as amended. The Examiner included the Anderson reference for aspects related to elements of the
10 dependent claims, and Applicant asserts that the inclusion of Anderson to the combination does not further teach or suggest the elements of the independent claims.


For these reasons, the Applicant asserts that the amended claim language clearly distinguishes over the prior art, and respectfully request that the
15 Examiner withdraw the §103(a) rejection from the present application.



CONCLUSION

Inasmuch as each of the objections have been overcome by the amendments, and all of the Examiner's suggestions and requirements have been satisfied, it is respectfully requested that the present application be reconsidered, the rejections be withdrawn and that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

 (Reg. No. 45,877)

Mark Bergner
SCHIFF HARDIN, LLP
PATENT DEPARTMENT
6600 Sears Tower
Chicago, Illinois 60606-6473
(312) 258-5779
Attorney for Applicants
Customer Number 26574

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on April 25, 2006.

